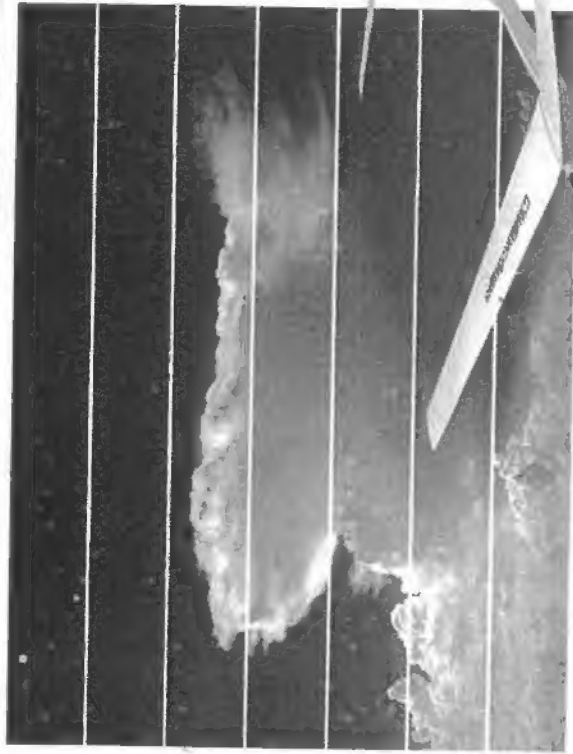


White Wolf®

COLLECTION SERIES
OFFICIAL EDITION
• 15 carefully selected models

EXCELLENT
15 PAPER AIRPLANES
COLLECTION SERIES

DESIGNED BY
DR. Y. NINOMIYA



Assembly Kit

Dr. Yasuaki Ninomiya was awarded the Grand Prize in both the flight time and distance divisions at the First International Paper Airplane Contest (Pacific Basin Division) in San Francisco in 1967 and served as a judge in the Second Great International Paper Airplane Contest in Seattle in 1985.

White Wings®

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Assembly Kit for 15 Models

Kit includes the following gliders



Racer 512 Finch



Racer 517 Ptarmigan



Light Plane 304 Thrasher



Racer 513 Meadowlark



Racer 518 Cardinal



Boeing 747



Racer 514 Goose



Light Plane 301 Flycatcher



Wright Flyer



Racer 515 Robin



Light Plane 302 Oriole



WINNIE MAE (Lockheed VEGA)



Racer 516 Mockingbird



Light Plane 303 Bluebird



General Dynamics
F-16 FIGHTING FALCON

■ **Instruction booklet**
(60 pages)
Assembly, flight,
and design directions

■ **Also included:**
Weights
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All necessary parts
(GLUE NOT INCLUDED)



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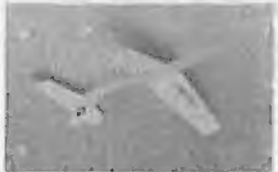
When you fly your plane please keep the following in mind.

*Launch your plane in a large area away from people who might get hit.
*Don't fly your plane where cars will be passing by.

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HOW TO BUILD "WHITEWINGS"



| | | |
|--|-------|--|
|  | P. 52 | Wright Flyer |
|  | P. 48 | Light Plane 303 Bluebird |
|  | P. 42 | Racer 518 Cardinal |
|  | P. 40 | Racer 515 Robin |
|  | P. 37 | Racer 512 Finch |
|  | P. 54 | "Winnie Mae" (Lockheed Vega) |
|  | P. 50 | Light Plane 304 Thrasher |
|  | P. 46 | Light Plane 301 Rycroft |
|  | P. 44 | Racer 516 Mockingbird |
|  | P. 38 | Racer 513 Meadowlark |
|  | P. 56 | General Dynamics F-16 Fighting Falcon |
|  | P. 51 | Boeing 747 |
|  | P. 47 | Light Plane 302 Oriole |
|  | P. 41 | Racer 517 Pterodactyl |
|  | P. 39 | Racer 514 Goose |

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part of the wing resembles a so-called saddle shaped surface in math. I call this type of wing a MOST (Modified Saddle Type) wing. It is constructed as follows.

CAUTION 1

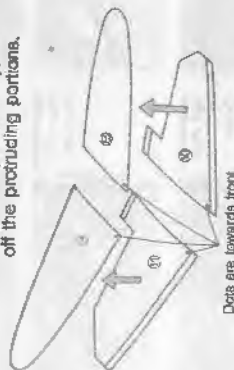
The parts numbers used below are for the Racer 512. As the part numbers and dihedral angle may change according to the model, be careful when you use these instructions for other models.

CAUTION 2

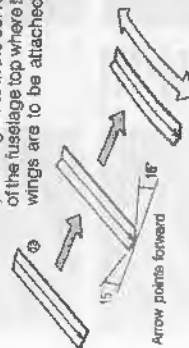
When constructing the Racer 512, start with step 0

■ Glue parts together in the order indicated

1. Glue parts ③ and ④ to the undersides of parts ② and ⑤ respectively. When dry, cut off the protruding portions.



2. Using a ruler along the center line, fold part ② from the center line to make a 15° angle on both sides. Then curve it carefully with your fingers to fit the curved edge of the fuselage top where the main wings are to be attached.

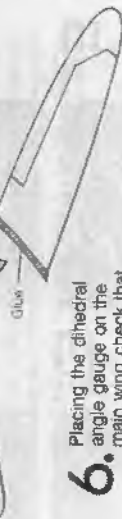


DATA are towards front

4. Apply glue on half of the underside of ② and glue onto ③ + ④. (The arrow should point towards the dot.)



5. In the same manner as in 4 attach ③ + ④ to the other side of ②.



6. Placing the dihedral angle gauge on the main wing check that the dihedral angle is 15°.

7. Putting folded stands under the main wing will be conducive to fast and thorough drying.



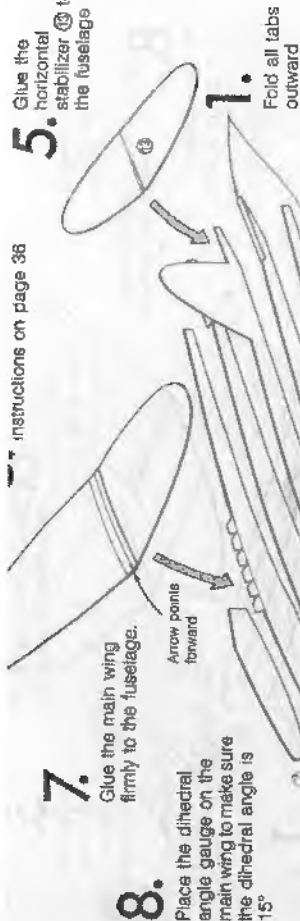
Folded paper stands

- 0.

Cut parts ③ and ④ along the solid lines up to the dashed lines. Then placing a ruler along the dashed line, bend the resulting strips slightly upward to make folding creases.

Instructions on page 36

5. Glue the horizontal stabilizer ⑬ to the fuselage.



2. Glue ① together.

- 3.

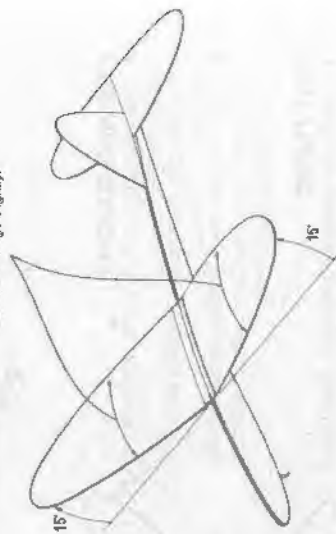
When dry, cut out the squares for ballast in the nose. (You should cut out the squares before gluing together.)

4. Insert the hook into the fuselage and glue on ⑭.



Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ③ and ⑦ and stick them lightly onto the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ③ and ⑦ securely to the fuselage.

Camber the wings slightly.



FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

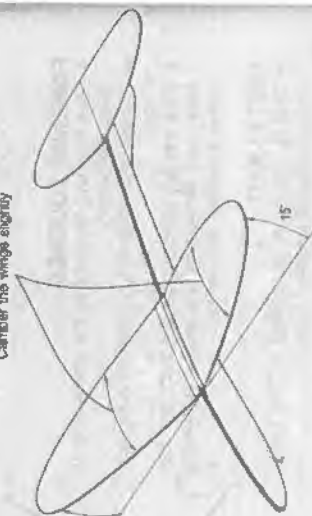
TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.



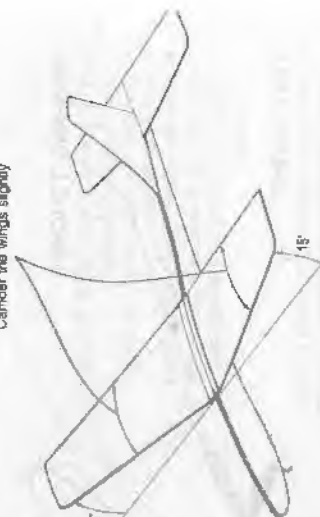
- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings

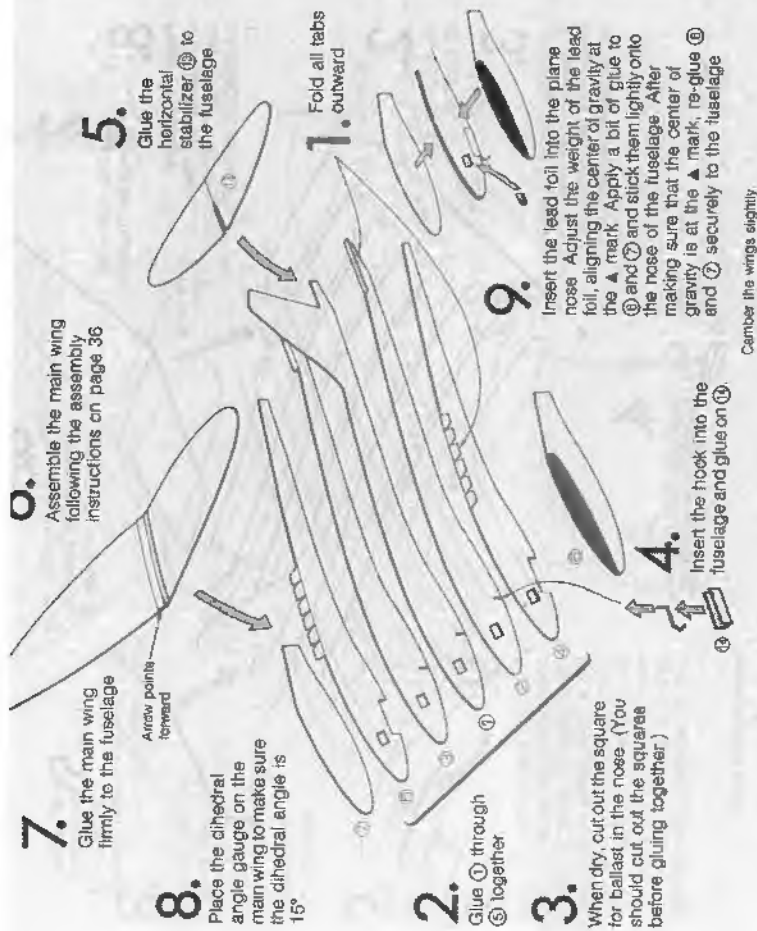
- Test fly the plane according to Test Flight instructions on pages 11 to 13.



- Give finishing touches to the plans after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

- Test fly the plane according to Test Flight instructions on pages 11 to 13.



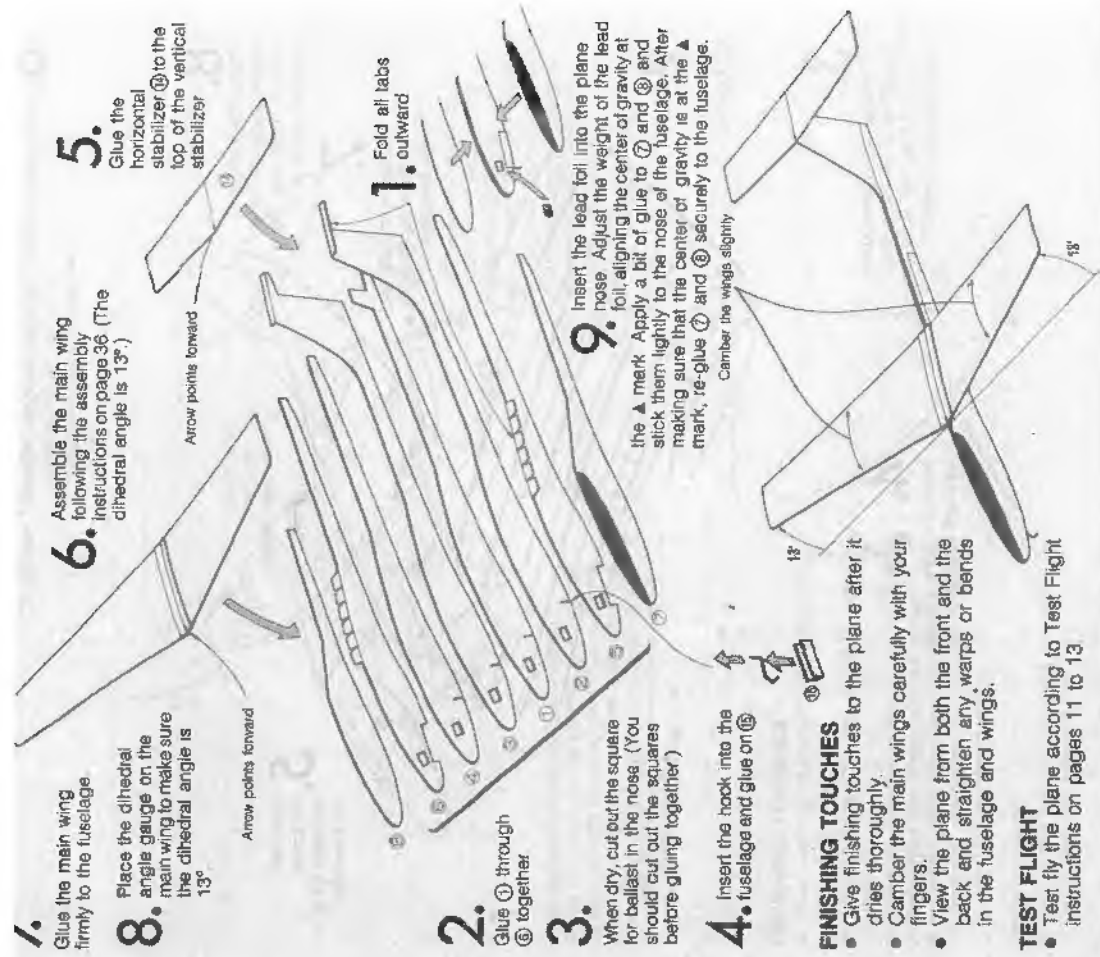


FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.



FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13

U. starting with step 0. The dihedral angle, however, must be 5°.

8.

Place the dihedral angle gauge on the wing to make sure the dihedral angle is 5°.

7.

Glue the middle part of the wing firmly to the fuselage.

Arrow points forward

5. Glue the horizontal stabilizer to the fuselage.

2.

Glue ① through ⑤ together

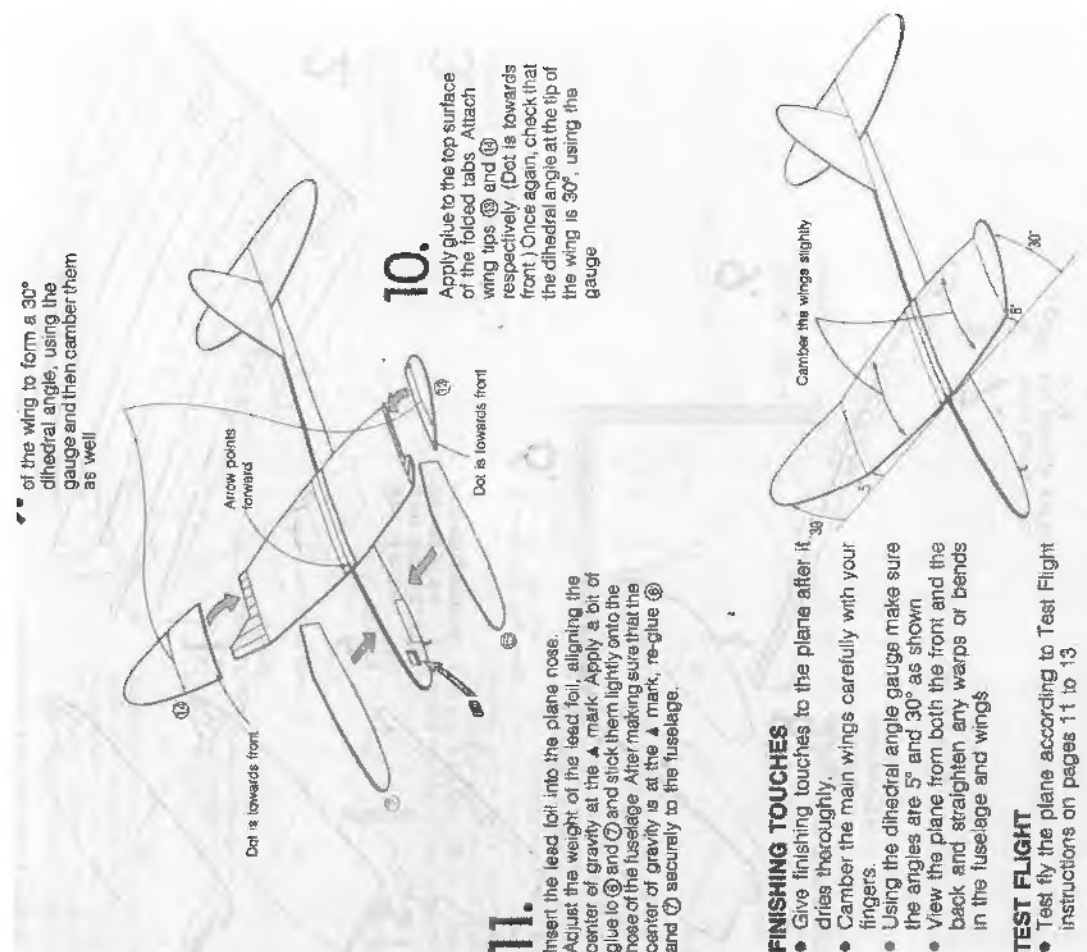
3.

When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)

4.

Insert the hook into the fuselage and glue on ⑥

1. Fold all tabs outward



10.

Apply glue to the top surface of the folded tabs. Attach wing tips ③ and ④ respectively. (Dot is towards front.) Once again, check that the dihedral angle at the tip of the wing is 30°, using the gauge.

11.

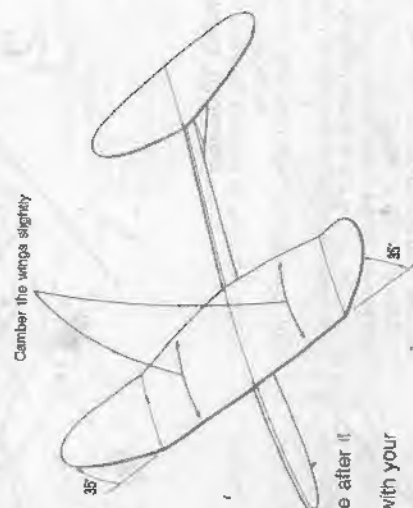
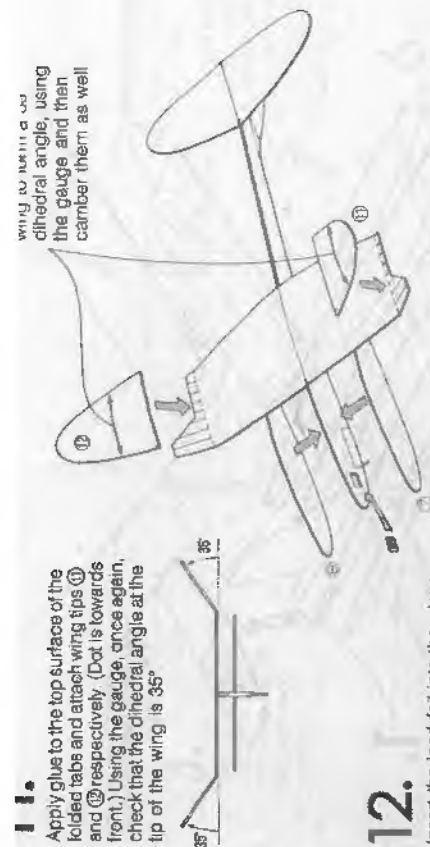
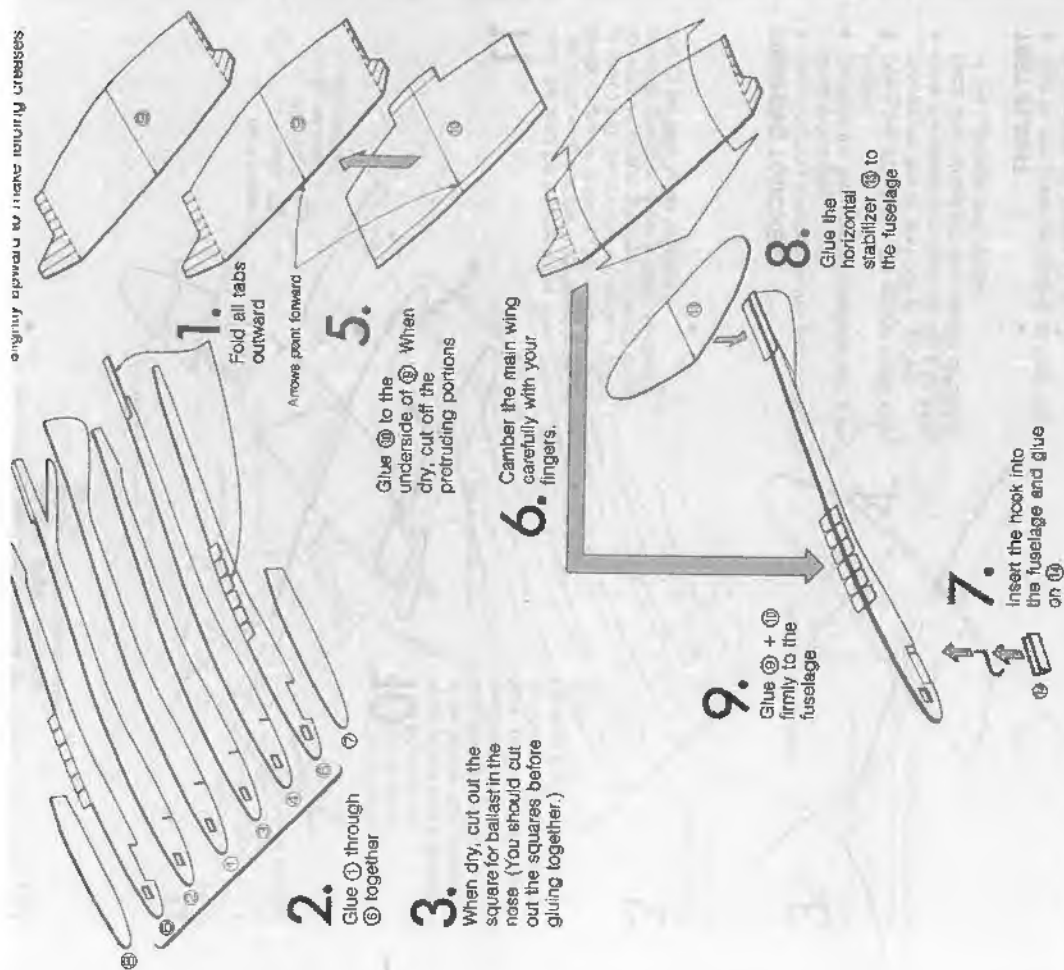
Insert the lead foil into the plane nose. Adjust the weight of the lead foil, aligning the center of gravity at the ▲ mark. Apply a bit of glue to ③ and ④ and stick them lightly onto the nose of the fuselage. After making sure that the center of gravity is at the ▲ mark, re-glue ③ and ④ securely to the fuselage.

FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- Using the dihedral angle gauge make sure the angles are 5° and 30° as shown.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13

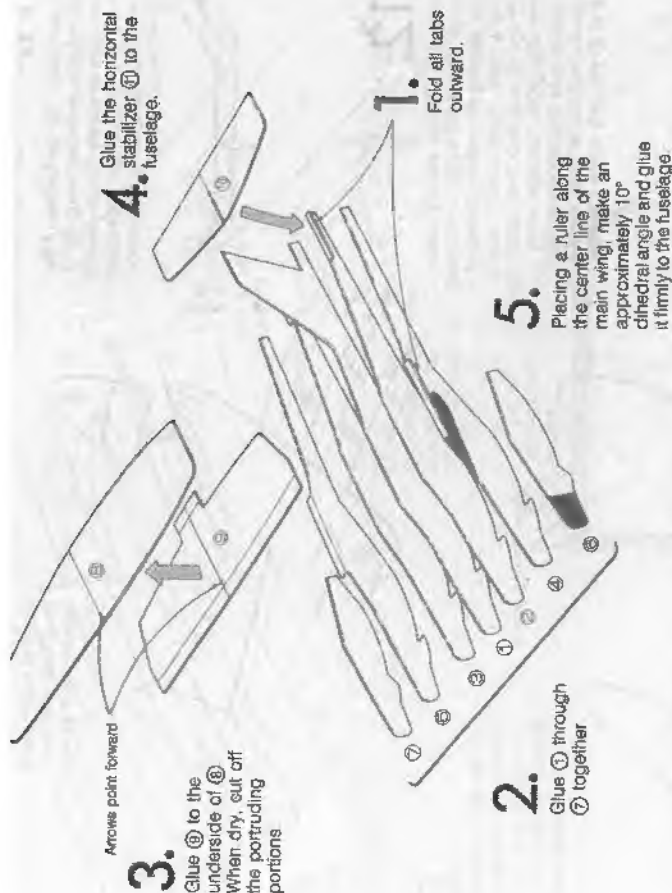


FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly
- Camber the main wings carefully with your fingers.
- View the plane from both the front and the back and straighten any warps or bands in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.



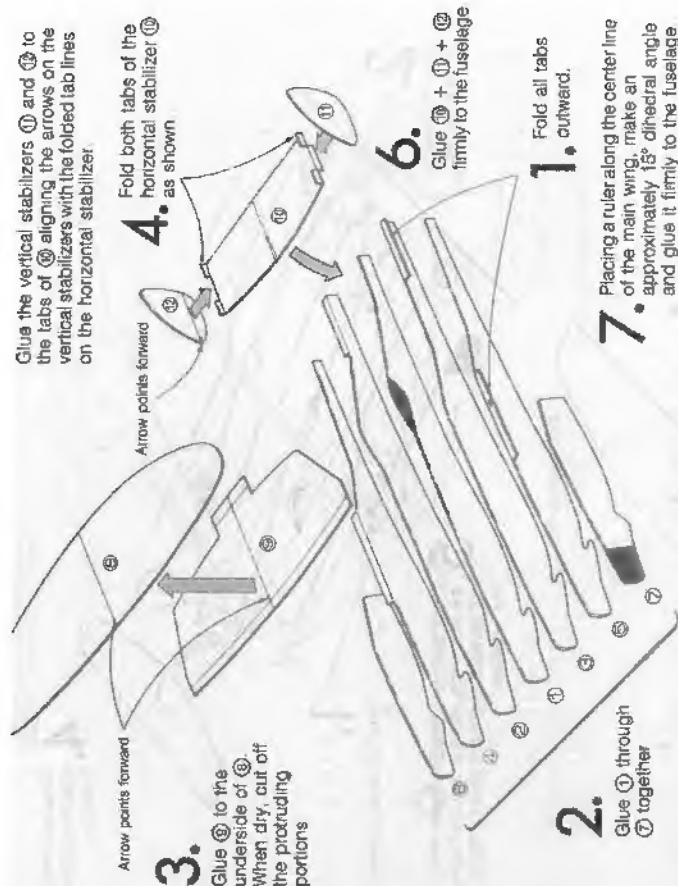
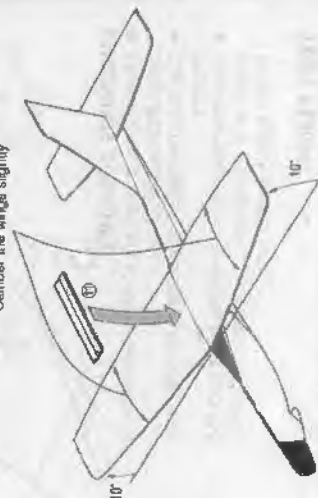
FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- 6. Camber the main wing slightly with your fingers.
- 7. Using the dihedral angle gauge make sure the dihedral angle is 10°.
- 8. Fold (10) up slightly along the center line and glue it onto the center of the main wing.
- 9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.
- No ballast is needed

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13

Camber the wings slightly



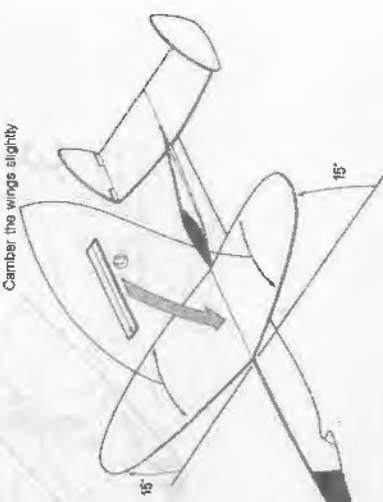
FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- 8. Camber the main wings slightly with your fingers.
- 9. Using the dihedral angle gauge make sure the dihedral angle is 15°.
- 10. Fold (10) up slightly along the center line and glue it onto the center of the main wing.
- 11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.
- No ballast is needed.

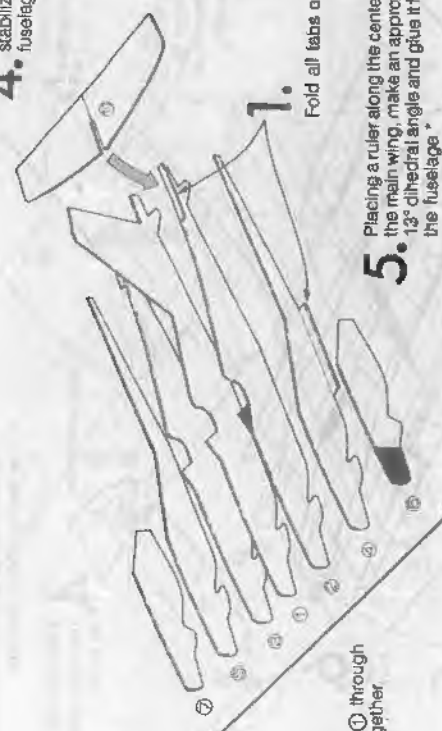
TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.

Camber the wings slightly



4. Glue the horizontal stabilizer ⑩ to the fuselage

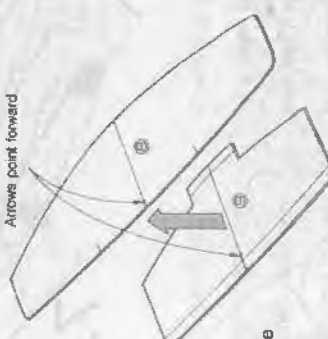


2. Glue ① through ⑦ together.

1. Fold all tabs outward.

5. Placing a ruler along the center line of the main wing, make an approximately 13° dihedral angle and glue it firmly to the fuselage.*

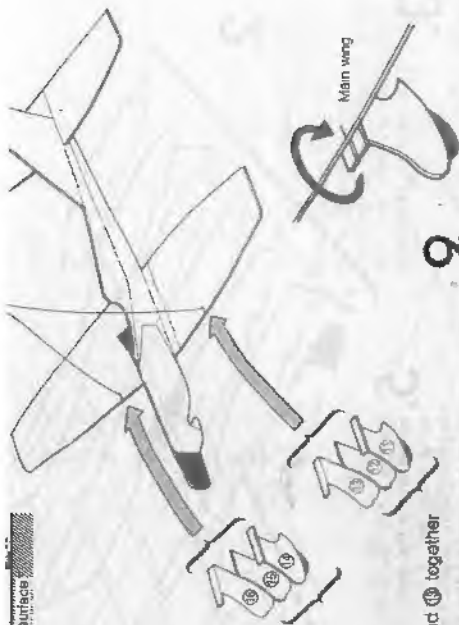
Arrows point forward



3. Glue ⑧ to the underside of ③. When dry, cut off the protruding portions.

*NOTE: You can find the center line of the bottom side of the main wing by folding it slightly. Alternatively, you can do this more precisely by making a pinhole at the either end of the center line on the top side of the main wing and then using the pinholes to draw the center line on the bottom side.

Flat surface



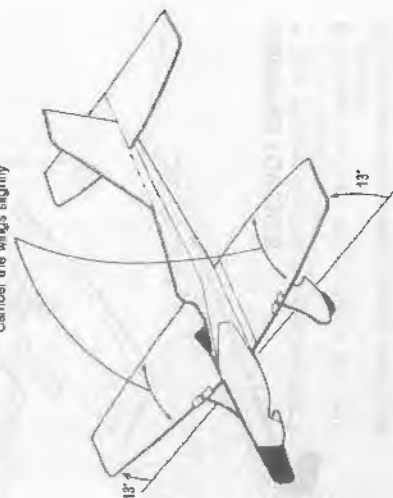
7. Glue ⑩, ⑪ and ⑫ together

6. Glue ⑬, ⑭ and ⑮ together

9.

Fold the protruding front part of the tab over the top of the wing and glue on

Camber the wings slightly

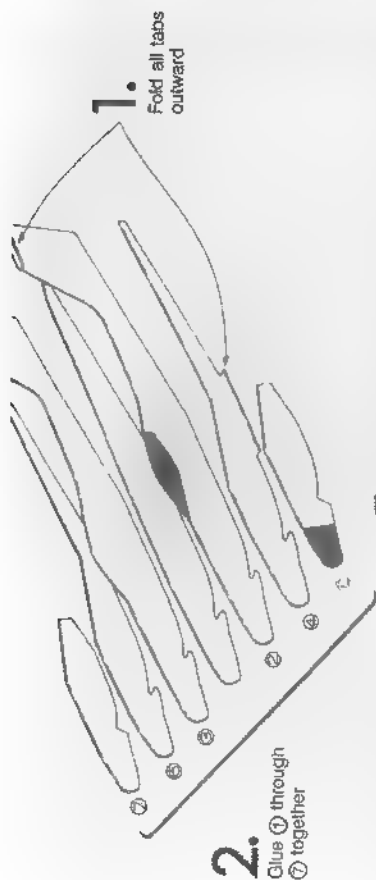


FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly
- 10. Camber the main wings slightly with your fingers
- 11. Using the dihedral angle gauge make sure the dihedral angle is 13°
- 12. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.
- No ballast is needed

TEST FLIGHT

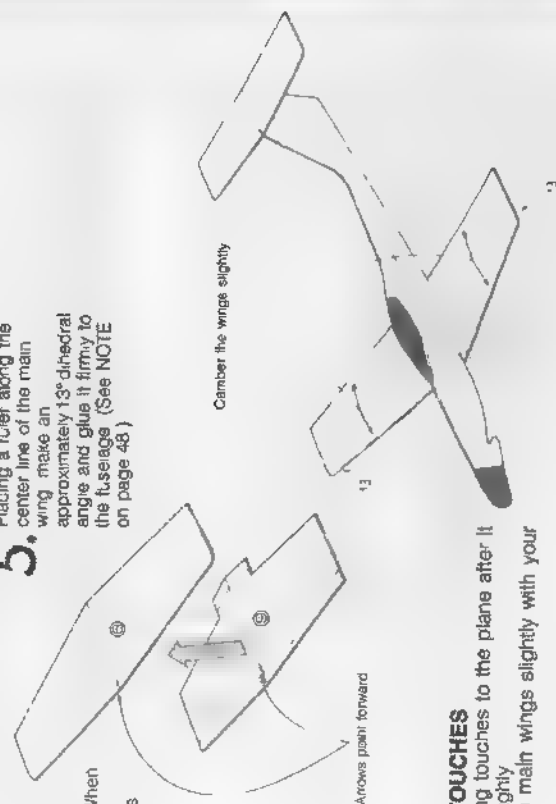
- Test fly the plane according to Test Flight instructions on pages 11 to 13



2. Glue ① through ⑦ together

3. Glue ⑧ to the underside of ⑥. When dry, cut off the protruding portions

5. Placing a ruler along the center line of the main wing, make an approximately 13° dihedral angle and glue it firmly to the fuselage. (See NOTE on page 48.)

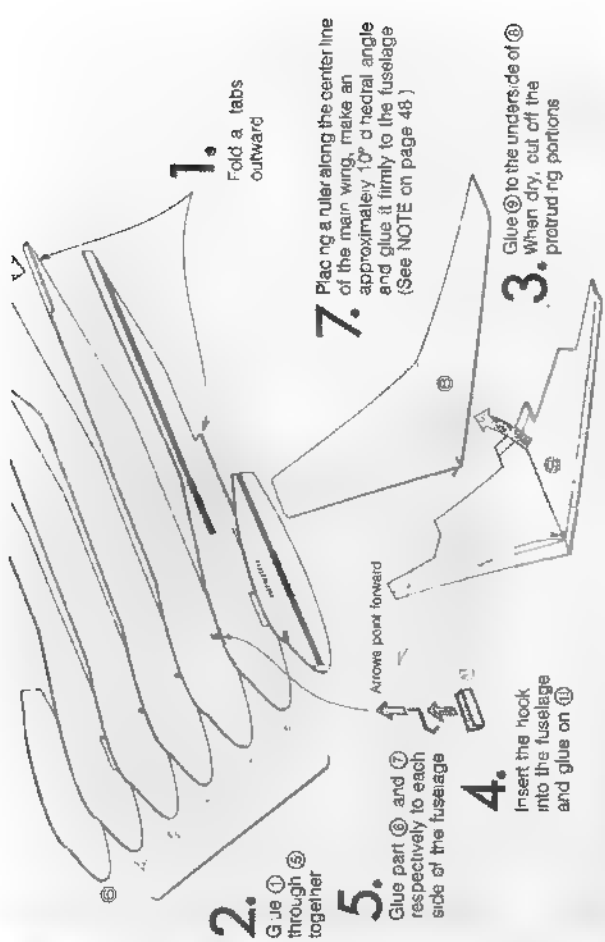


FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- 6. Camber the main wings slightly with your fingers.
- 7. Using the dihedral angle gauge make sure the dihedral angle is 13°.
- 8. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.
- No ballast is needed

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13



2. Glue ① through ⑦ together

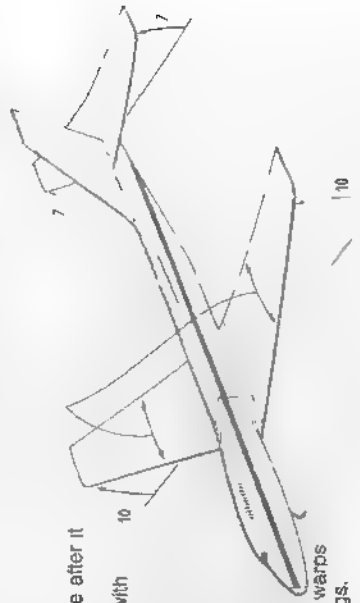
5. Glue part ⑥ and ⑦ respectively to each side of the fuselage

4. Insert the hook into the fuselage and glue on ④



7. Placing a ruler along the center line of the main wing, make an approximately 10° dihedral angle and glue it firmly to the fuselage. (See NOTE on page 48.)

3. Glue ⑧ to the underside of ⑥. When dry, cut off the protruding portions

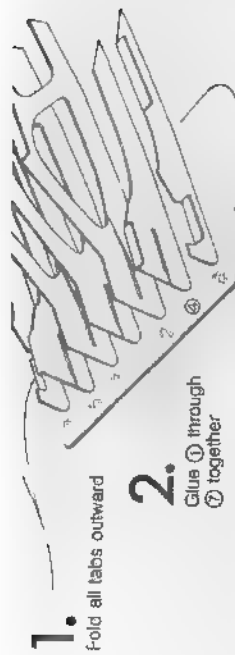


FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly.
- 8. Camber the main wings slightly with your fingers.
- 9. Using the dihedral angle gauge make sure the dihedral angle is 10°.
- 10. Using the dihedral angle gauge, make a dihedral angle of 7° on the horizontal stabilizer.
- 11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.
- No ballast is needed

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13



1.

Fold all tabs outward

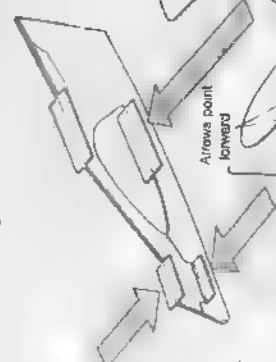
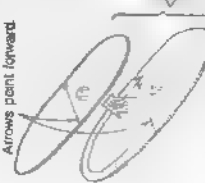
2.

Glue ① through ⑦ together

4.

Glue parts ⑩ and ⑪ together with ⑬ on top. Then glue this upper front wing assembly to the tabs on top of the nose

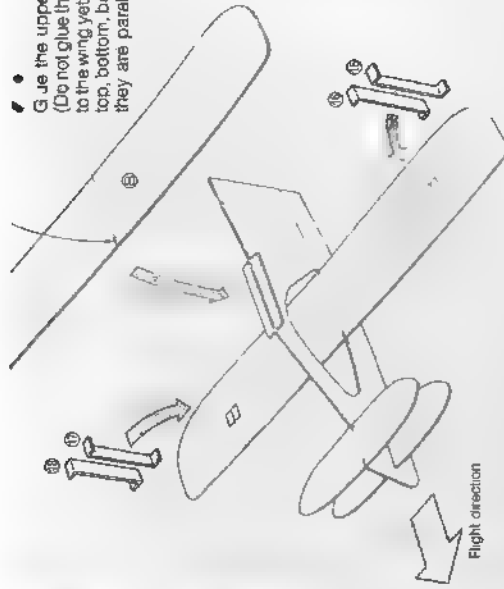
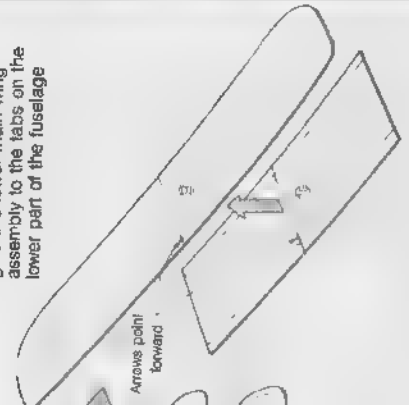
Arrows point forward



3.

Glue parts ⑩ and ⑪ together with ⑬ on top. Insert this lower front wing assembly into the slit in the nose of the plane and glue it in place

5. Glue ⑩ to the underside of ⑤. When dry, cut off the protruding portions. Then glue in a lower main wing assembly to the tabs on the lower part of the fuselage



6.

Give ⑬ and ⑭ together to make a pylon and glue the bottom of the pylon to the mark in the middle of the wing. Do the same with parts ⑮ and ⑯

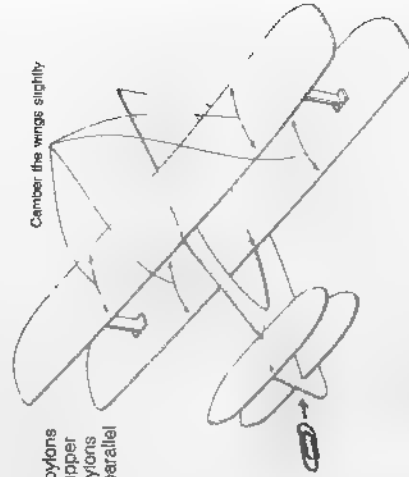
Flight direction

8.

Glue the top part of the pylons to the underside of the upper wing. Make sure the pylons and the fuselage are parallel as shown



Center the wings slightly

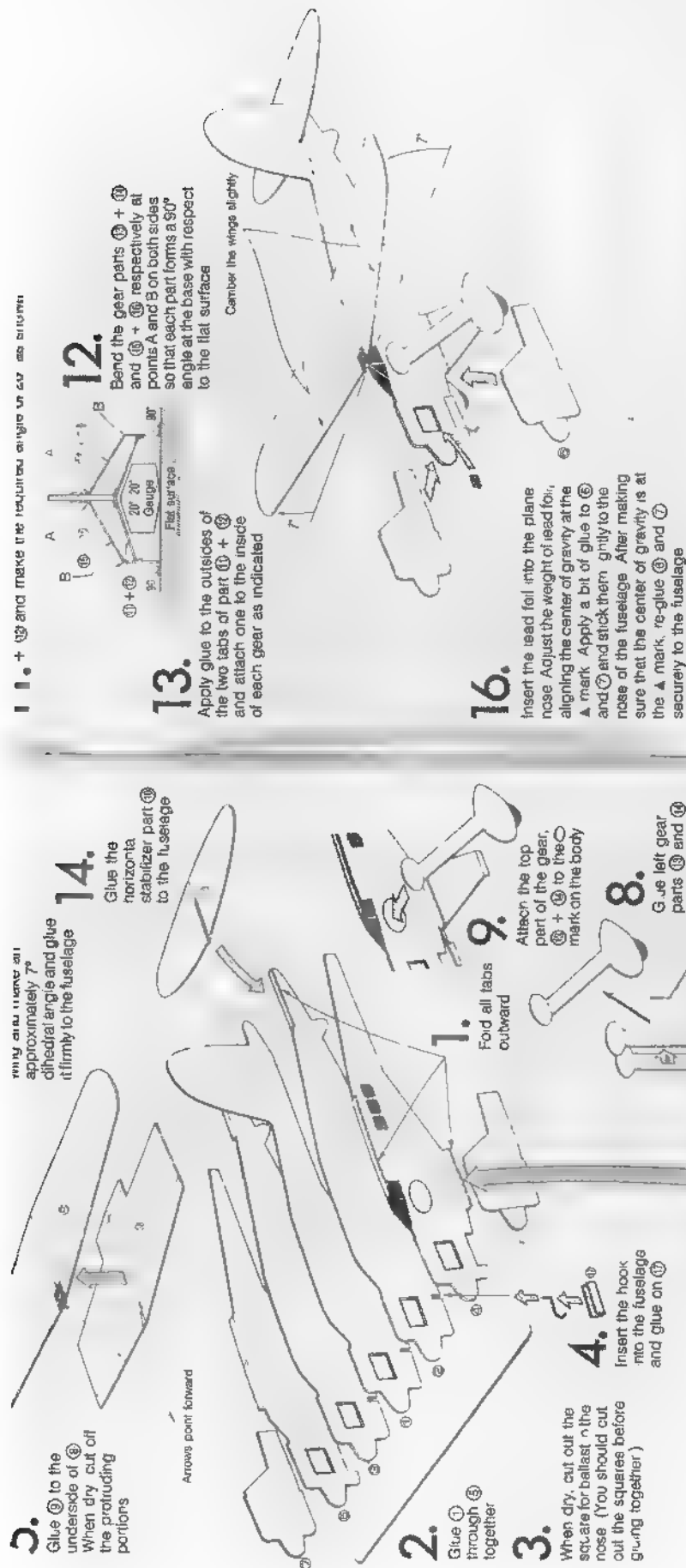


FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly
- 9. Camber the main wing slightly with your fingers
- 10. The dihedral angle is not needed
- 11. When you fly this FLYER outdoors, attach one or two of the included paper clips on the plane nose. Make sure the center of gravity is at A mark. When you fly it indoors, it's better to attach no clips to have floating and longer flights
- 12. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings
- No ballast is needed

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13 (Canard model). This plane is not suitable for catapult launch so always launch by hand



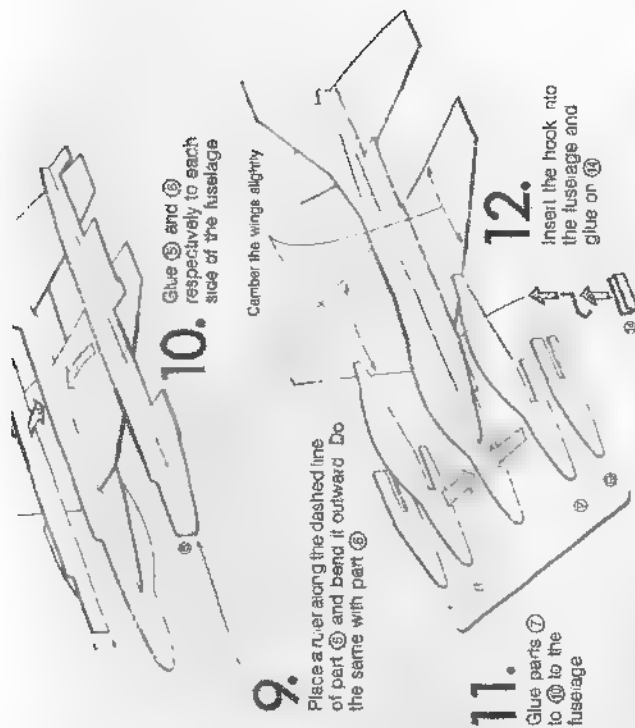
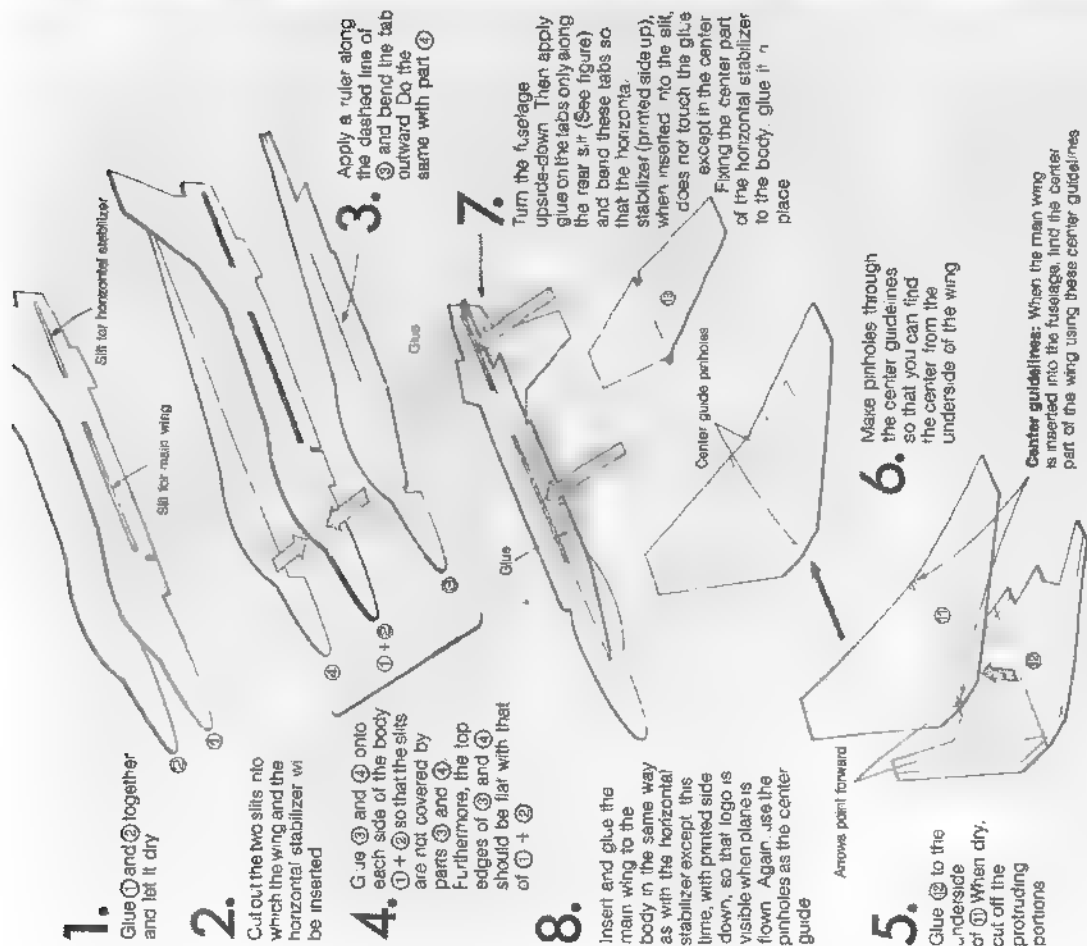
1. Fold all tabs outward
2. Glue ① through ⑤ together
3. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.)
4. Insert the hook into the fuselage and glue on ④
5. Glue ⑥ to the underside of ④. When dry cut off the protruding portions
6. Glue parts ⑦ and ⑧ together with ⑨ on top. Then bend the assembled piece along the center line as shown
7. Glue ⑩ + ⑪ to the tab at the bottom of the plane
8. Glue left gear parts ⑫ and ⑬ together and bend the assembled piece into the shape shown
9. Attach the top part of the gear, ⑭ + ⑮ to the O mark on the body
10. Assemble and place the right gear using parts ⑫ and ⑬ in the same manner as ⑩ and ⑪
11. + ⑯ and make the required angle in 20° as shown
12. Bend the gear parts ⑯ + ⑰ and ⑱ + ⑲ respectively at points A and B on both sides so that each part forms a 90° angle at the base with respect to the flat surface
13. Apply glue to the outsides of the two tabs of part ⑱ + ⑲ and attach one to the inside of each gear as indicated
14. Glue the horizontal stabilizer part ⑳ to the fuselage
15. Camber the wings slightly
16. Insert the lead foil into the plane nose. Adjust the weight of lead foil, aligning the center of gravity at the Δ mark. Apply a bit of glue to ⑥ and ⑦ and stick them gently to the nose of the fuselage. After making sure that the center of gravity is at the Δ mark, re-glue ⑥ and ⑦ securely to the fuselage

TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13

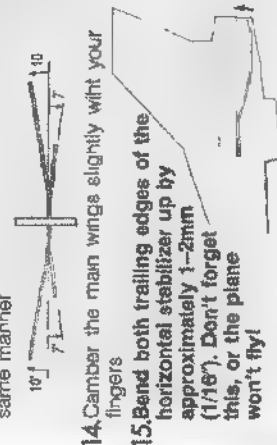
FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly
- 17. Camber the main wing slightly with your fingers
- 18. Using the dihedral angle gauge make sure the dihedral angle is 7°
- 19. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings



FINISHING TOUCHES

- Give finishing touches to the plane after it dries thoroughly
- 13.** Using a ruler, make the dihedral angle 10° on the main wing at the end of the flat tab where not glued. Make a dihedral angle of minus 7° on the horizontal stabilizer in the same manner



- 16.** View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings

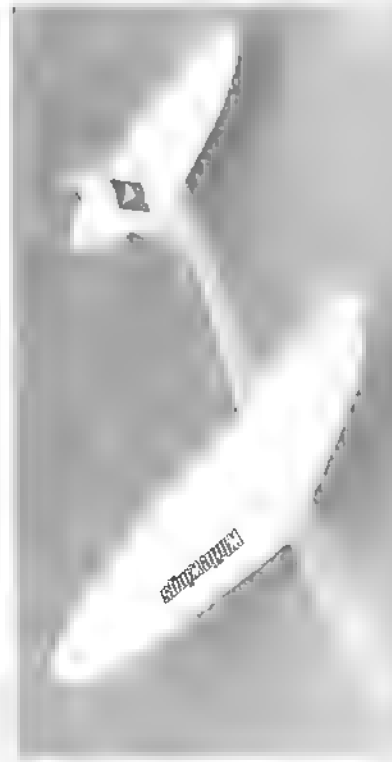
TEST FLIGHT

- Test fly the plane according to Test Flight instructions on pages 11 to 13.
- If your plane tends to dive down or if it flies upside-down when flying upwards, the reason might be because of insufficient bending at the trailing edges of the horizontal stabilizer so keep bending the part just a fraction more until you get a straight flight

Arrow points forward

Dots are towards front.

WhiteWings



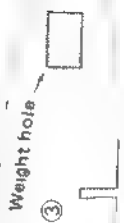
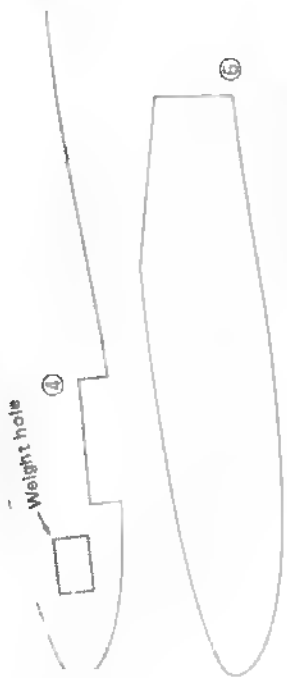
Fold with dashed line inside.
Arrows point forward.

WhiteWings®

Racer 512 Finch

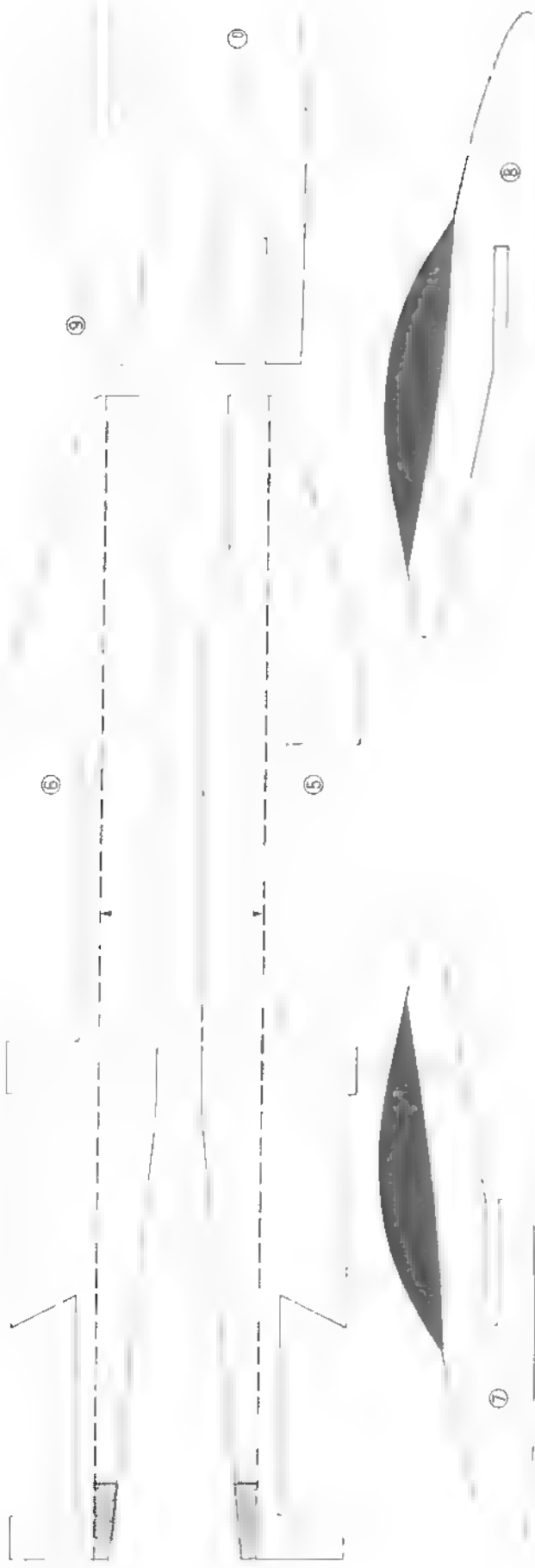


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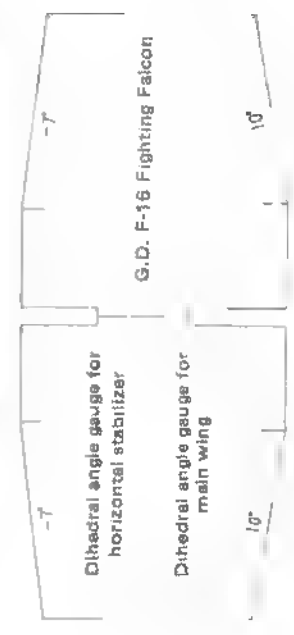


Dihedral angle gauge

15°

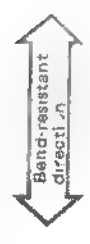


--- Fold with dashed line inside.
 ↑ Arrows point forward.



WhiteWings®

General Dynamics F-16 FIGHTING FALCON





④

②

①

③

⑤



Arrow points forward.



12

When the main wing is inserted into the fuselage find the center part of the wing using these center guidelines.

Center guidelines
Arrow points forward

13



Center guidelines
Arrow points forward.



14

WhiteWings



Center guidelines

Arrows point forward.



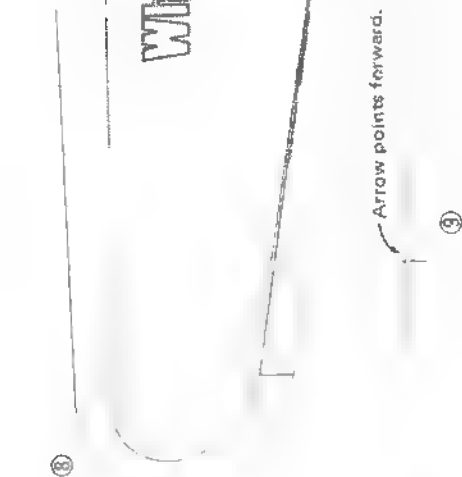
WhiteWings® General Dynamics F-16 FIGHTING FALCON

Angle gauge for landing gear strut

WINNIE MAE

Dihedral angle gauge for main wing

20° 20°



Arrow points forward.



NR-105-W

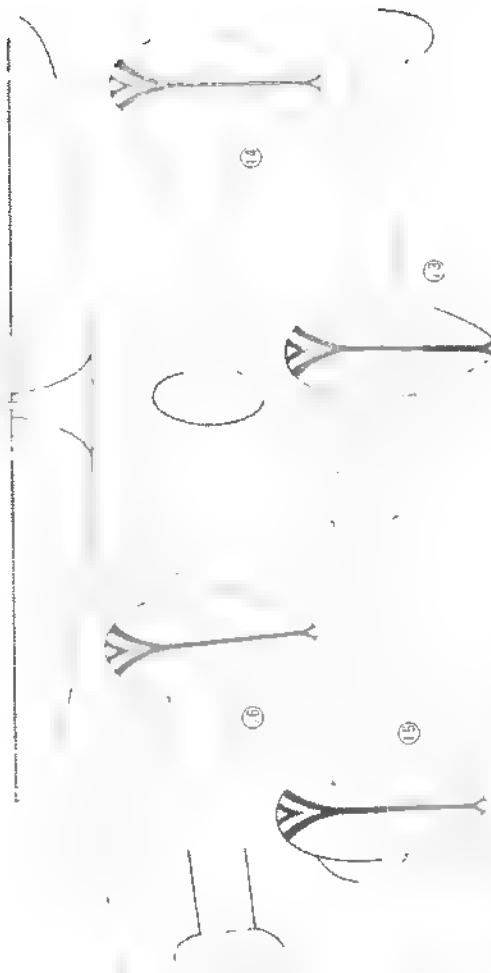
WhiteWings

Arrow points forward.

front

10

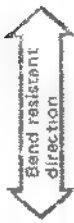
3



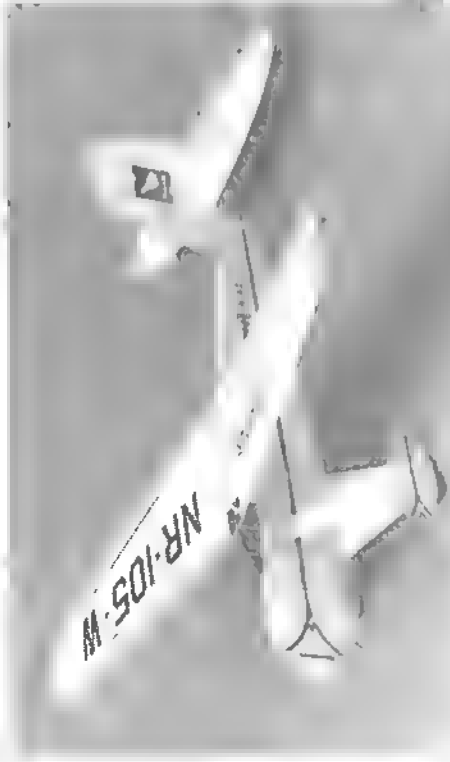
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"WINNIE MAE" (Lockheed VEGA)

Fold with dashed line inside.
Arrows point forward.



Band resistant
direction



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12

⑤

⑦

Cut along the solid lines to the dashed line
and fold the tab outward

④

⑥

Cut along the solid lines to the dashed line
and fold the tab outward

WhiteWings®

Wright FLYER

--- Fold with dashed line inside
+ Arrows point forward.



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Cut this part out.

①

Cut this part out.

②

Cut this part out.

③

④

⑤

⑥

⑦

Arrow points forward.

⑩

Arrow points forward.

Center guidelines

Arrow points forward.

Arrow points forward.

WhiteWings® Wright FLYER

Arrows point forward



③

⑤

⑧

--- Fold with dashed line inside.
↑ Arrows point forward.

WhiteWings

Arrow points forward

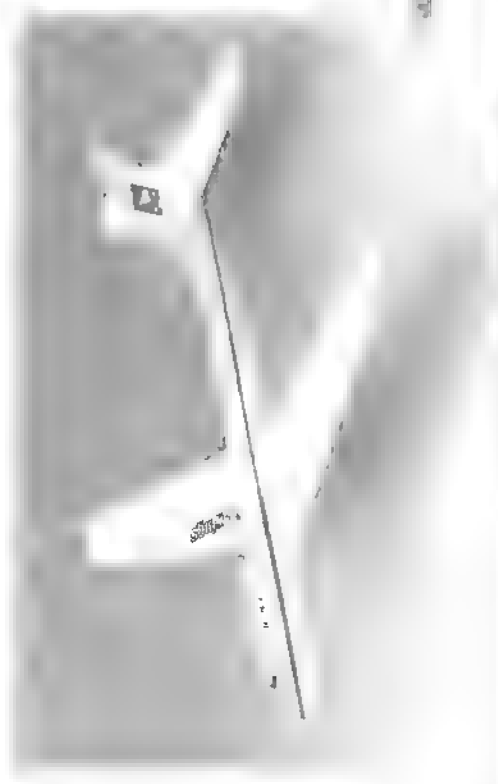
⑩

WhiteWings®

Boeing 747



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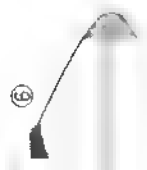


Main wing 10°
 Horizontal stabilizer 7°
 Dihedral angle gauge 1°

③

Arrow points forward

②



①

④

⑤

— Arrow points forward

WhiteWings

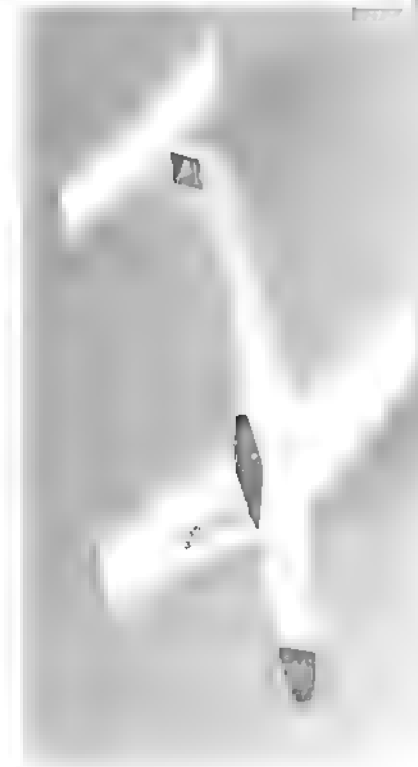
8

— Arrow points forward.

9

— Arrow points forward.

10



WhiteWings

Light Plane 304 Thrasher

13

13

Dihedral angle gauge

— Fold with dashed line inside.
— Arrows point forward.



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⑤



⑦

③



②



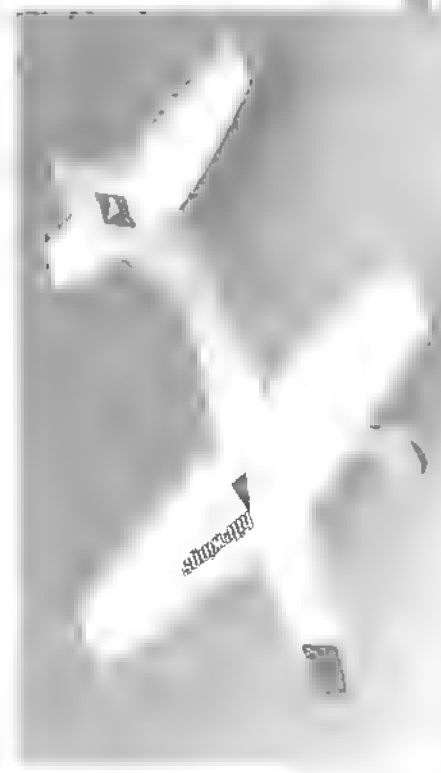
④



①



⑥

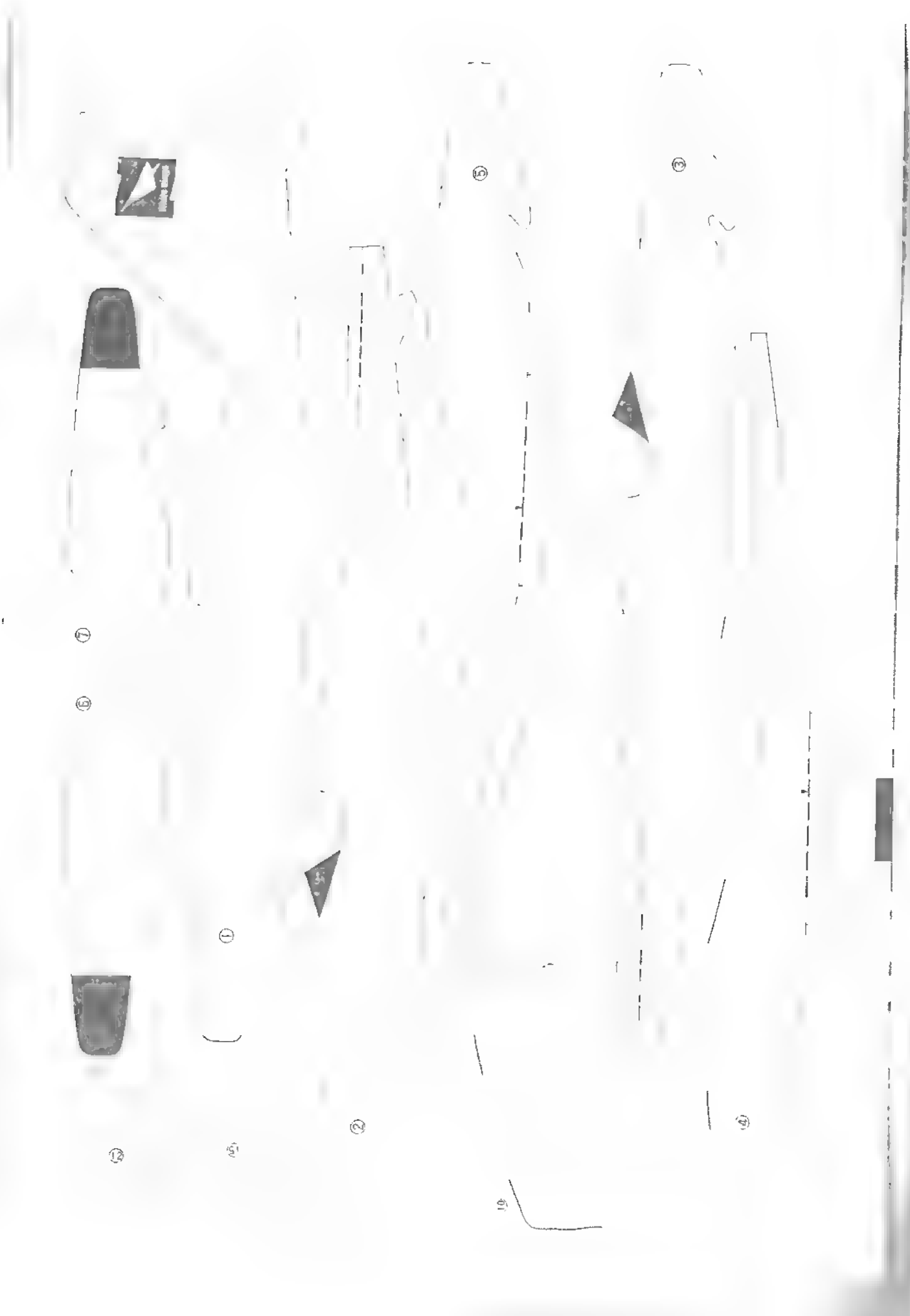


WhiteWings®

Light Plane 303 Bluebird

--- Fold with dashed line inside.
↑ Arrows point forward.





⑦

⑥



⑫

①

⑤



②

⑤

③



④

10

Arrow points forward.

⑧

WhiteWings

Arrow points forward.

Cut along the solid lines up to the dashed line.

Arrow points forward.

⑨

Cut along the solid lines up to the dashed line.

⑩

--- Fold with dashed line inside.
+ Arrows point forward.



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Light Plane 302 Oriole

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②

⑦



③

①

⑤

④



②

①

⑥

Dihedral angle gauge

15°

15°

Arrows point forward

Arrow points forward.



Arrow points forward.

WhiteWings

Arrow points forward.



10



WhiteWings®

Light Plane 301 Flycatcher

--- Fold with dashed line inside.
↑ Arrows point forward



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Dihedral angle gauge
10°



④



⑤



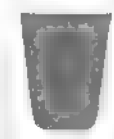
①



②



③



⑥

⑦



⑧ Dots are towards front ⑨

Dihedral angle gauge

WhiteWings

5° 5°

Dots are towards front.

Cut along the solid lines up to the dashed line.

Cut along the solid lines to the dashed line.

Dots are towards front.

⑩

⑪

⑫

⑬

⑭

⑮

WhiteWings®

Racer 518 Cardinal

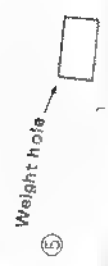
--- Fold with dashed line inside.
↑ Arrows point forward

Band-resistant direction

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①⑤



Arrow points forward.



⑦

⑥



⑫

Dot is towards front. Arrow points forward. Dot is towards front.

WhiteWings

Dot is towards front.

Dot is towards front.

Dihedral angle gauge

Arrow points forward.

WhiteWings[®]
Racer 517 Ptarmigan

--- Fold with dashed line inside.
↑ Arrows point forward



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Arrow points forward.

⑨

WhiteWings

⑪ Dots are towards front.

⑫

Arrow points forward.

Cut along the solid lines up to the dashed line.

Arrow points forward.

Cut along the solid lines up to the dashed line.

⑬

⑭

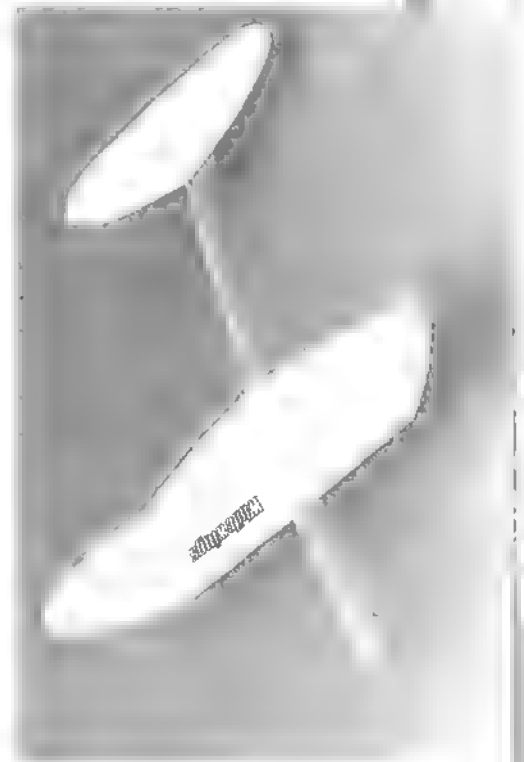
--- Fold with dashed line inside.
↑ Arrows point forward.



WhiteWings[®]

Racer 516 Mockingbird

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Weight hole

④

Weight hole

①

Weight hole

③

Weight hole

②

Weight hole

⑥

Weight hole

⑤

Dihedral angle gauge

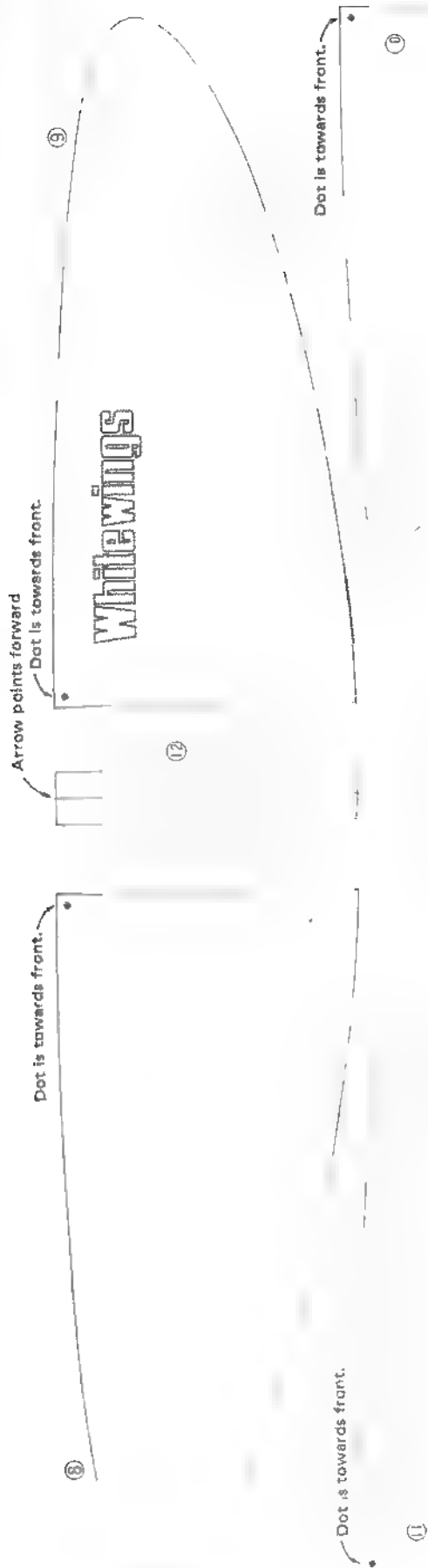
25°

⑦

⑧

⑩



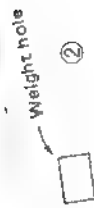


White Wings®

Racer 515 Robin

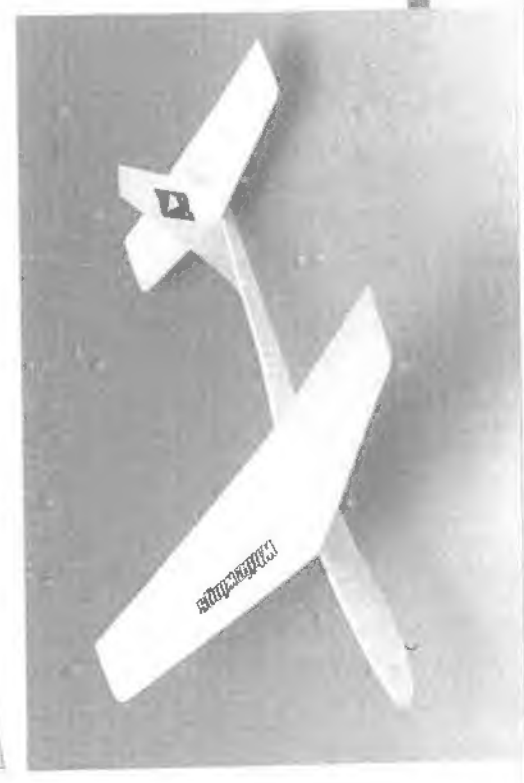
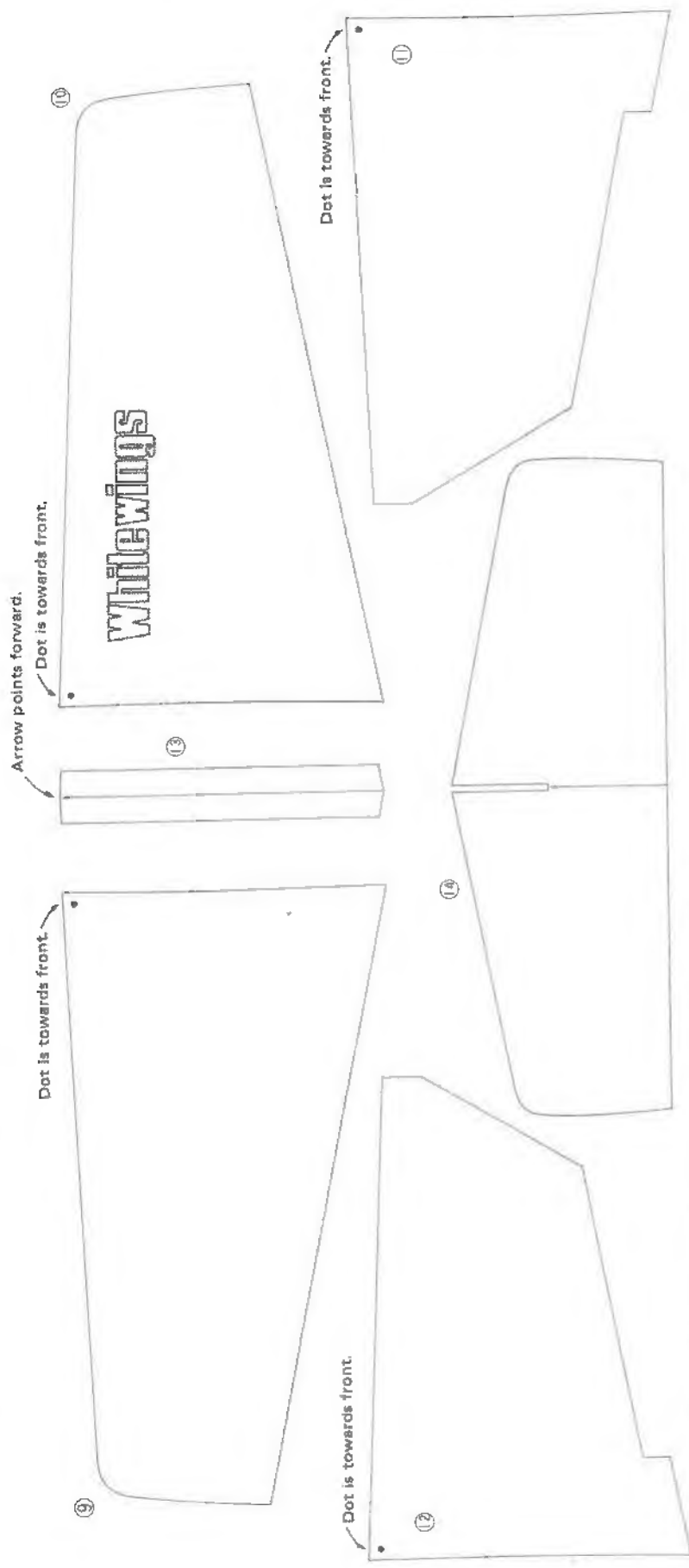
--- Fold with dashed line inside.
 ↑ Arrows point forward.





Dihedral angle gauge



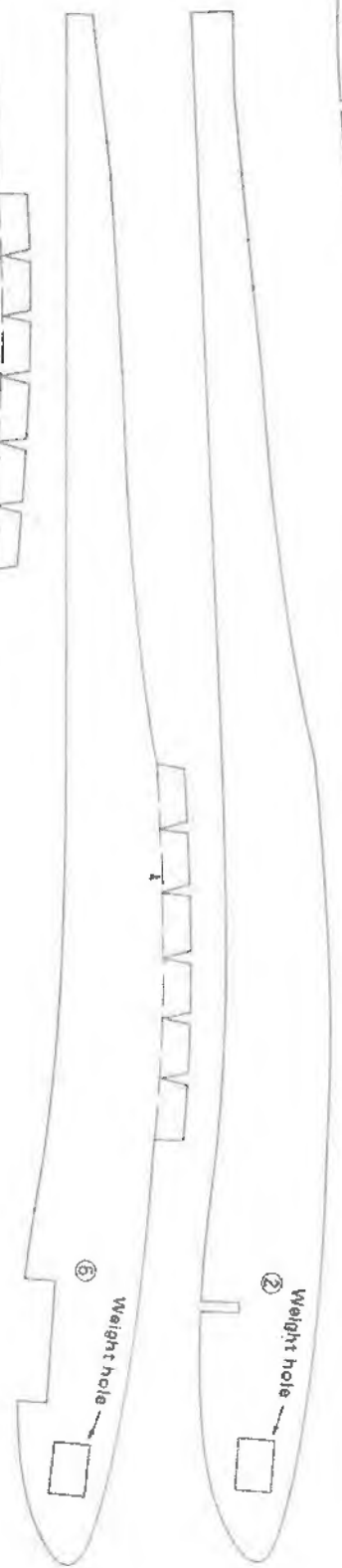
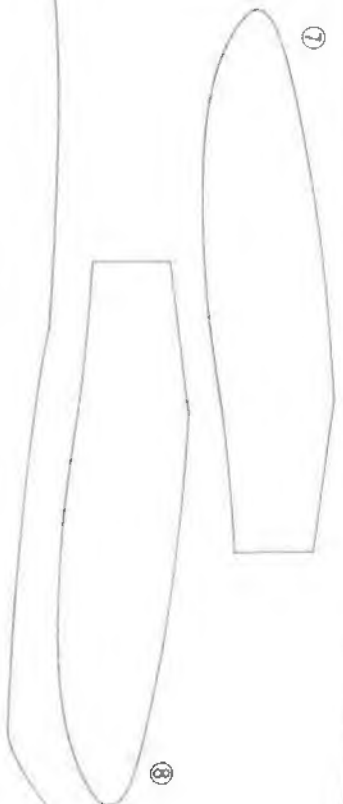
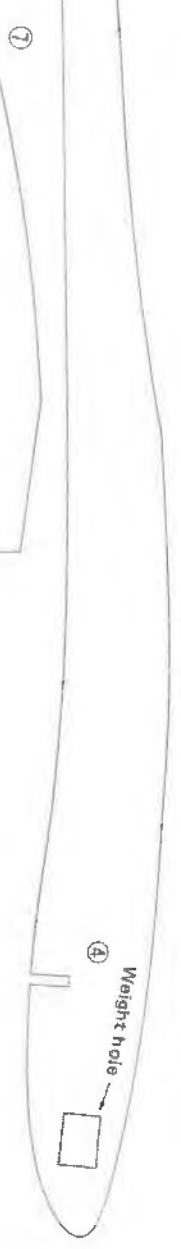
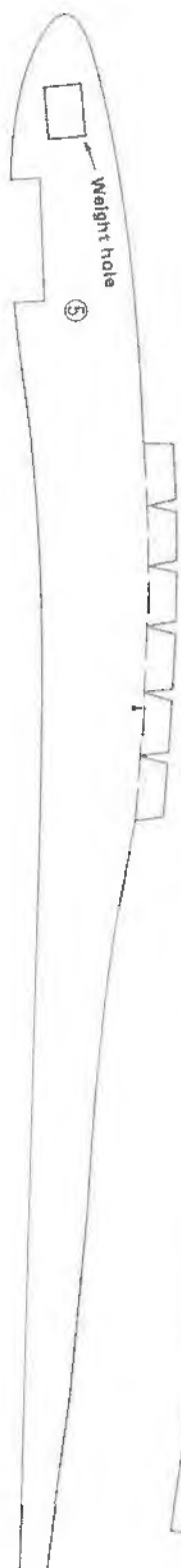
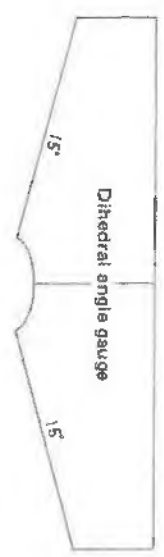


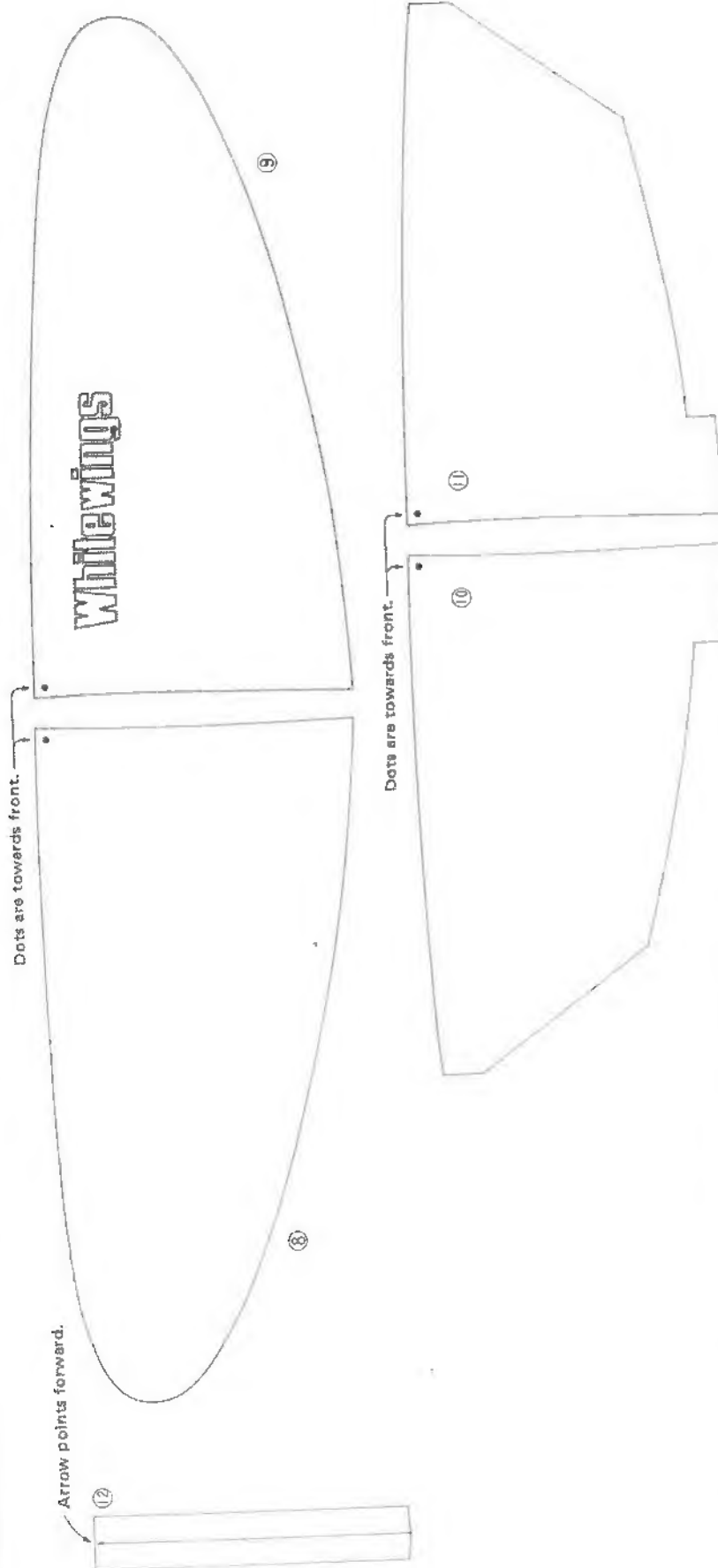
--- Fold with dashed line inside.
 ↑ Arrows point forward.
 ⇄ Bend-resistant direction

WhiteWings®

Racer 514 Goose

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White Wings®

Racer 513 Meadowlark

--- Fold with dashed line inside.
↓ Arrows point forward.



